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Attendees	Jeff Brillhart, NHDOT Bill Cass, NHDOT Tony Grande, VHB Howard Muise, VHB Bruce Tasker, VHB Marty Kennedy, VHB SEE ATTACHED LIST	Date/Time:	November 30, 2000, 7:00 PM
Place:	Windham Middle School, Windham NH	Project No.:	Salem – Manchester 50885 10418-C
		Re:	Public Officials meeting # 8-I-93
		Notes taken by:	Bruce Tasker, Reviewed By Jeff Brillhart.

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## **INTRODUCTION**

Jeff Brillhart made introductions and noted that the meeting was an opportunity to update officials and the public on the project status, issues and direction.

## **PROJECT OVERVIEW**

Jeff provided an overview of what efforts have occurred since the last series of meetings that were held in each of the five communities along the section of I-93 beginning back in March.

1. The Department completed a Scoping Report in May and is working to complete a Rationale Report in mid-January. Both reports are preludes to the Draft Environmental Impact Statement (DEIS) due to be available a year from now. The Scoping Report provides an understanding of the project purpose and need, an overview of environmental resources and existing conditions and a discussion of project issues and alternatives to be considered.  
The Rationale Report provides a discussion of the broad range of alternatives and options, and what alternatives or options should be carried forward for more detailed study, and what alternatives or options should be dropped from further study.  
The Environmental Impact Statement will synthesize the data from these early reports and discuss project alternatives and project impacts in more detail
2. The Department has completed a Rail Alternatives Study that looked at the feasibility of, and issues involved with, reinstitution of rail service between Manchester and points south. The study was written as a first step to considering rail service to address the overall transportation system served by the highway.

3. The Department is in the process of completing the Ridership Study that looked at alternative modes of transportation. The information collected and evaluated in this study will serve in part as the justification for eliminating from further study various transportation mode options or combinations of options.
4. The Department has held eight Advisory Task Force meetings in the various towns along the corridor over the last six months. Al Turner has served as Windham's Task Force member.

The Department has also met with the Environmental Resource Agencies seven times. The last two Resource Agency meetings were held in Derry to provide the opportunity for the public to attend these meetings and hear first hand the issues that are important to these agencies.

The Department has also met twice with the stakeholder Agencies as part of Senator Bob Smith's initiative to streamline the design and environmental permitting process. The intent of these meetings is to improve the study process by improving communication, providing for signoffs at major project milestones, and implementing a process by which disputes can be elevated to a Board of Directors for quick resolution. In doing so, the permitting process can be completed in a more timely manner.

In addition, the Department has held a number of meetings with Town staff, Regional Planning Commission officials, and individual stakeholders to consider specific issues.

Communications with Massachusetts is also underway and formal meetings with the MA Highway Department, the Merrimack Valley Planning Commission and the MBTA are anticipated to begin in mid-December.

5. The Department is moving forward to implement Intelligent Transportation Systems technology along the corridor. This would essentially involve variable message boards and perhaps highway advisory radios to improve communications with motorists to making driving the corridor better before, during and after construction.

The Department is also working with the NH State Police and local safety related officials to improve upon Incident Management so that accidents can be addressed more efficiently to reduce congestion and delay to motorists. Both the ITS and improved Incident Management measures are being funded out of the I-93 project funding.

6. The Department is currently moving forward with developing park and ride lots at Exits 2, 3, and 5. It is hoped that these can be developed, constructed and be in service prior to beginning the I-93 highway widening. We are also working with the bus company to be sure that bus service is available when the park and ride lots are completed.
7. The Department is moving forward with two wetland mitigation projects in advance of the widening of I-93. The one site in Salem is scheduled to advertise for construction in January 2001 and the second site in Londonderry will advertise for construction in early 2002. Together these sites are expected to serve as the cornerstone of the Department's effort to address impacts to wetlands resulting from the widening. These early efforts are intended to speed up the permitting process.

8. Jeff also noted that the Town of Windham has requested that the Department to consider the preservation and protection of land in Windham to serve as part of wetland mitigation the Department is contemplating for this project.

Jeff then introduced Howard Muise to talk about the Ridership Study used to evaluate the merits of other mode options.

### RIDERSHIP STUDY

Howard Muise:

As part of trying to improve the segment of I-93 from Salem to Manchester, we have conducted a Ridership Study to consider mode options such as bus service, rail service and the use of high occupancy vehicles (HOV) lanes, and see how these mode options alone or in combination with each other or with various widening schemes might address the transportation needs of the I-93 corridor.

To do this, a modeling technique based on census journey-to-work data and travel time and costs, has been used to estimate the number of potential riders that might use a particular mode of travel. There were essentially eight (8) mode options (three rail options, two bus options and three highway options) investigated. The mode options were tested and to some degree refined. As part of the early testing, a fourth rail option, providing service between Manchester and Boston via the Lawrence Station utilizing the I-93 corridor was dropped as it did not provide any appreciable difference in ridership from what was being estimated for another rail option (the East Rail option). Early testing also ruled out evaluating the HOV option of having an HOV lane in NH only. The early testing showed that to have any chance of success, HOV lanes would need to extend into Massachusetts to the MA 128/I-93-interchange area.

After reasonable individual mode options were developed, they were then tested using ten (10) mode combinations. The mode combinations were set up to see how the mode options would affect each other and various highway layouts including:

- No-Build
- Widening I-93 with one general use lane NB & SB ( total 6 lanes)
- Widening I-93 with two general use lanes NB & SB (total 8 lanes)

Since the development of the data based on the 10 mode combinations, three more mode combinations (requested at some of the project meetings) were added to the original ten and tested. Lastly, the ridership data generated has been looked at in terms of reasonableness based on what has happen elsewhere for commuter services. The methodology and the results appear to be reasonable.

### **The conclusions based on the ridership study data are as follows:**

- 1) The most significant finding of the study was that bus service, rail service and the use of HOV lanes either alone or in combination with each other, do not provide enough relief in terms of congestion to eliminate the need to widen the highway if acceptable levels of service are to be achieved over the next 20-years.

The mode options will help alleviate the length of time over which congestion occurs. That is the time-period of congestion might be reduced from 3+ hours in the morning and evening rush hours to something less, but the peak hour of congestion will remain. Under many of the mode combinations tested, the 3+ hour period of congestion will remain.

- 2) The more the highway is widened, the less incentive you provide to encourage people to use rail service, bus service, or HOV lanes. These mode options carry more riders when the highway is congested.
- 3) With regard to rail, the Enhanced Rail option that provides service down I-93 from Exit 5 (or the Manchester Airport) to the Woburn Transportation Center in Massachusetts generates the highest level of ridership and diversion of traffic from I-93. The East Rail Corridor option generates 1/3 to 1/2 the ridership as the Enhance Rail to Woburn. The West Rail corridor, connecting Manchester to Nashua to Lowell, Massachusetts is not effective in addressing the needs served by I-93.
- 4) With regards to the HOV options relative to ridership, for an HOV lane to have any success it must extend well into Massachusetts.  
However, even under that scenario, the HOV option only generates enough ridership in the HOV lane south of Exit 1 to be considered successful. North of Exit 1 the HOV ridership generated does not meet the minimum threshold in the peak hour to warrant construction of an HOV lane.
- 5) With regards to bus service, the two bus options (Enhanced Bus and Expanded Bus) when combined together with an HOV lane, generate almost as much ridership as the I-93 Enhanced Rail option which carries passengers down the I-93 corridor to the Woburn Transportation Center. For bus options to be most effective, they need to travel in an HOV lane or bus-only lane.
- 6) With regards to widening the highway, with or without transit service, the highway south of Exit 1 should be widened to 5 lanes in each direction to provide for an acceptable level of service within the 2020 time frame under consideration. Between Exit 1 and Exit 3, the highway should be widened to 4 lanes in each direction. North of Exit 3 the highway should be widened to at least 3 lanes in each direction.

**In addition to the results provided by the Ridership Study several other issues need to be considered. They include:**

- 1) The Ridership Study essentially considers commuter traffic expected during the morning and afternoon peak hours. It does not take into consideration weekend or holiday tourist traffic. It should be recognized that tourist and holiday traffic needs will not be addressed by the alternative modes of travel.
- 2) The Ridership Study does not address or account for the serious safety deficiencies associated with the highway, and how safety is further compromised by the high volumes of traffic utilizing a corridor with insufficient capacity.
- 3) With regards to rail options, the Enhanced Rail option requires significant investment on the part of Massachusetts to bring such an option to fruition. On the other hand, the I-93 Enhanced Rail option has real potential for Massachusetts' riders and the I-93 corridor in Massachusetts. This potential has not been studied as part of the NH study of I-93, but will be looked at as part of an I-93 study underway by the Merrimack Valley Planning Commission in Massachusetts. NH and MA will need to coordinate their studies.
- 4) With regards to the HOV option, this option requires a significant investment by Massachusetts as well. In addition, Massachusetts would need to consider the ridership anticipated in an HOV lane to ensure that such a lane does not carry too many HOV's and overwhelm the lane.

Also, an HOV lane in NH raises operating issues relative to how traffic entering and exiting the HOV lane operates with slower traffic in the general use lanes.

- 5) With regard to bus service, the ridership study does not account for the number of busses required to carry the ridership and does not account for the lack available docking space at South Station in Boston. The practicality of so much bus service could be a problem. Currently there are no plans by Massachusetts to expand the South Station facility.
- 6) With regard to widening options, to accommodate traffic during construction, two-lanes must be available at all times. Consequently, if the highway were to be widened by one lane only, some additional temporary widening maybe required and in effect a four lane foot print would result.

In addition, to address safety issues, traffic management lanes may be required to facilitate the safe movement of traffic entering and exiting the highway. For instance, south of Exit 1 a Northbound collector-distributor section of highway maybe required to allow for the safe movement of traffic wishing to get on to the highway from the Salem Rest Area and those wishing to get off at Exit 1.

Between Exits 4 and 5 traffic management lanes may also be required to accommodate Exit 4-A, a proposed interchange currently under study by the Towns of Derry and Londonderry.

**Based on the Ridership Study and preliminary engineering evaluations the following alternatives are recommended for further study:**

- 1) The No-Build alternative which essentially serves as a basis for purposes of comparison with the Build alternatives.
- 2) Transportation Systems Management (TSM) measures which are minor improvements that can be accomplished within the existing ROW at minimal expense. Such measures generally do not address the project purpose and need, but they need to be considered and potentially constructed if a full build alternative cannot be approved.
- 3) Widening I-93 to 4-lanes in each direction south of Exit 3 and 3-lanes in each direction north of Exit 3. In addition, this alternative would include constructing or expanding park and ride lots at Exits 2,3,4, and 5 and facilitating bus service to Boston and industrial centers in northern Massachusetts, as well as providing room for and as practical constructing, sub-grade for transit service with in the highway corridor.
- 4) Widening I-93 to be 4-lanes in each direction the entire length of the corridor, in addition to the same park and ride lot construction, bus service enhancements, and provision for future transit service as noted with the previous widening alternative.
- 5) Widening I-93 to 3-lanes in each direction for the entire length of the corridor, with the amenities previously proposed with the other widening schemes.
- 6) Transportation Demand Management (TDM) measures which involve little or no construction to try and reduce the demand on the roadway: for example, employer based measures involving incentives and disincentives to encourage people to not drive alone, drive during off hours, telecommute, etc.

TDM measures involving bus service will be considered.

TDM measures involving rail service and involving HOV lanes, congestion management toll lanes, and reversible lanes will be addressed in the Rationale Report and recommended to not be carried forward for further study. These measures do not result in enough diversion to influence the need to widen the highway and result in major additional expenditures for construction and long term maintenance. In addition, these measures also require substantial investment by the State of Massachusetts.

## **PLAN PRESENTATION**

Tony Grande:

**General:** When we first presented concepts to widen the highway and reconstruct the interchanges, the layouts were shown using tissue overlays and it was difficult to understand the plans. We are showing the concepts in a CADD format at two scales: 1"=400 feet for the mainline and the rail alternative, and 1"=200 feet for the interchange areas.

### **I-93 mainline corridor**

The typical section that was used for all these layouts consists of a 4-lane highway in each direction, with provisions for the fourth lane in each direction to be an HOV lane. In addition, the layouts include provisions for a rail line in the highway corridor, the width of which varies between approximately 60 feet to 90 feet depending the type of facility that needs to be constructed through an area.

There is essentially one mainline from the State line to Exit 1 with most of the widening occurring to the west to avoid impacts to Policy Brook. A collector-distributor road adjacent to the NB barrel will be developed to accommodate traffic trying to get in and out of the rest area and off at Exit 1. The rail line is located along the west side of I-93.

Between Exit 1 and Exit 2, three options were developed to assess design variations and impacts through the area surrounded by Prime wetlands. The first option holds the existing outside edge of the NB pavement as the inside edge of the proposed widening with all widening to accommodate the highway elements occurring to the east. The rail line would be essentially located where the existing NB pavement is today. This option would result in no impacts to Porcupine Brook. However, this option would impact Prime wetlands along the east side of I-93, as well as several residences and businesses.

The second option would utilize the existing NB pavement as part of the new highway layout and widen the highway to the east to accommodate the four lanes. The future rail line would be accommodated on structure (to minimize impacts to Porcupine Brook) in the median. This concept substantially reduces the impacts to the Prime wetlands, residences and business along the east side of I-93. The concept also reduces the amount of roadwork and bridgework that would be required under option 1.

A third option would entail having the rail line located not in the median, but instead be located along the west side of the SB barrel similar to that proposed south of Exit 1. The line would remain outside the SB barrel through Exit 2 until north of the Brookdale Bridge overpass because of geometric difficulty in trying to cross the rail line back into the median further south.

North of Exit 2 the widening of I-93 involves shifts to the outside and the median side depending on the location of environmental resources and developed properties and the need to minimize impacts.

In the vicinity of Exit 5, three alignments for the rail corridor have been considered. The first alignment retains the rail line in the median and crosses over NH 28 at Exit 5 before swinging westerly under I-93 SB barrel and connecting to the existing abandoned rail line. This alignment would require sharp curvature as the rail passes under the highway, limiting the train speed to 25mph or less.

The other two alignments provide 50 to 60 mph geometry for the rail. The southerly alignment leaves the median south of Exit 5 and crosses NH 28 near Perkins Road before connecting back into the abandoned rail line. The northerly alignment crosses over NH 28 at Exit 5 and then swings westerly on new location behind the Coca-Cola facility before connecting back into the abandoned rail corridor.

North of Exit 5, the highway widening would utilize much of the Bodwell Road/I-93 project footprint currently under construction.

## **Interchange Concepts**

### **Exit 1**

At Exit 1, two concepts will be carried forward for further evaluation. The first will be an upgrade of the existing interchange, retaining the same geometry as exists today. To allow for the maintenance of traffic during construction, this option will require temporary widenings, which may impact the Prime wetland areas adjacent to the interchange ramps.

The second concept will be to reconstruct the interchange to improve the SB off-ramp geometry in keeping with modern design standards. This will require permanent impacts to Prime wetlands not impacted by the first concept.

### **Exit 2**

At Exit 2, the proposed northbound ramps maintain the same basic diamond configuration that exists today. On the SB side of the interchange there are two concepts to eliminate the problematic weave that exists today. The first is similar to the SB layout involving diamond type ramps with a signal located at their intersection with Pelham Road. The second concept would involve developing free-flow ramps for the EB and WB traffic on Pelham Road to travel SB on I-93 via a collector-distributor ramp before merging on I-93 SB. For this second concept the SB off-ramp would shift out around the SB on-ramp and intersect Pelham Road at a signalized intersection opposite Keewaydin Drive. The full diamond type configuration of the first concept would require 5 signals along the affected section of Pelham Road, while the loop-ramp configuration of the second concept would require 4 signals. The full diamond type design would have fewer impacts because of the tighter design layout involved. Both of these concepts will be carried forward for further evaluation. A park and ride facility is proposed in the southeast quadrant of the interchange area, with a connection to South Policy Road for access.

### **Exit 3**

At Exit 3, the I-93 NB barrel will be shifted westerly to provide for NB ramp improvements, while minimizing impacts to potentially environmentally sensitive resources to the east.

The Exit 3 area, has a number of interchange configuration options that can be best understood by looking at the three major components of the interchange area and how they are connected to I-93. They include the NH 111 roadway, the SB ramps, and the NB ramps.

For NH111, it will be reconstructed to provide for two through-lanes in each direction with turning lanes at the intersection areas, as necessary through the interchange area. The new NH 111 will generally follow the existing NH 111 alignment east of the SB ramps, however to the west of the ramps, three concepts were developed as follows:

- The first option involves a continuation of the upgrade reconstruction of existing NH 111 on existing alignment. This would have substantial impacts to properties on both sides of NH 111 west of I-93 SB. The access to some of the abutting properties would be eliminated or reduced to right turns only because of a median island necessary as part of the NH 111 reconstruction. This option is not proposed to be carried forward due to the substantial impacts associated with this layout.
- The second concept involves a shift of the NH 111 alignment northerly approximately 400 feet, which would reduce the impacts to properties along the south side of a NH111 adjacent to Cobbetts Pond. The shift would increase the impacts to some of the properties on the west side of NH 111 and extend the work along NH 111 westerly beyond the NH

111 intersection with Wall Street. This concept would reconfigure the bypassed section of existing NH111 into a frontage road. This new frontage road would dead-end near the new SB on-ramps to the east and would reconnect to the new section of NH 111 opposite Wall Street to create a signalized 4-way intersection. (It should be noted that this layout for NH111 is the same layout for NH111 that was presented as part of the 1995 Windham-Salem project.) This northerly shift will be carried forward for further evaluation in the DEIS.

- The third concept for NH 111 is a compromise of sorts between the upgrade concept 1 and the 400-foot northerly shift for concept 2. Concept 3 reduces the amount of the northerly shift away from NH 111 and connects the relocated portion of NH 111 to existing NH 111 sooner. A portion of existing NH 111 would still be retained as a frontage road to provide access to properties to the south along Cobbetts Pond, but the frontage road would be somewhat shorter than proposed with concept 2. This concept will be carried forward for further evaluation in the DEIS.

The southbound ramps involve two interchange configuration concepts, which include:

- A standard diamond ramp layout for the SB off and on-ramps with a signal at the intersection of the ramps and NH111.
- The second concept involves free-flow ramp layouts for traffic heading eastbound and westbound on NH 111 that wants to travel south on I-93. The SB off-ramp would intersect NH 111 at a new signalized intersection. The diamond type ramps would have fewer impacts than the loop concept because of the tighter design layout involved. Both of these concepts will be carried forward for further evaluation.

The northbound ramps basically involve three different configurations, which include:

- A 1995 ramp layout (previous Windham-Salem NH 111 study project) that includes a flyover two-lane ramp design for the I-93NB to NH 111 WB movement. This ramp configuration requires three bridges and a long merge area to the west for the ramp traffic and the NH 111 WB traffic to merge from four lanes WB to the existing one lane WB in the vicinity of the Wall Street intersection. This interchange layout would basically retain the existing I-93NB off-ramp/NH 111 intersection in close proximity (400 ft between intersections) with the existing NH 111A signalized intersection. This layout is proposed to not be carried forward for further evaluation due to the greater impacts and costs associated with this design.
- A second concept would connect the NB off-ramp with NH 111 at a signalized intersection approximately 1100 feet from the NH 111A intersection. The ramp would operate with double-left and right-turn lanes. The NB on-ramps from NH 111 would include a free flow loop ramp for EB NH 111 traffic and a free-flow diamond slip ramp for WB NH 111 traffic. This concept will be carried forward for further evaluation in the DEIS.
- A third concept would utilize the same NB off-ramp configuration as for concept 2, but the free-flow movement for the NB on-ramp would access I-93 via a signalized on-ramp, similar to the NB on-ramp layout today. This option will be carried forward for further evaluation in the DEIS.

#### Exit 4

Two concepts were developed for Exit 4. Both options retain the same general ramp configuration as the existing interchange layout. The concepts include a westerly I-93 widening concept and an easterly I-93 widening concept as related to the I-93 mainline.

- The easterly widening concept would hold the existing west edge of the SB mainline barrel and widen I-93 easterly to minimize the reconstruction of the existing SB ramps and eliminate the substantial amount of ledge/rock excavation that would be necessary with a westerly widening concept. The existing NH 102 roadway would be widened and the NH 102 bridge over I-93 would be replaced with a wider and longer structure to accommodate the need for additional lanes along NH 102 and the need to span over the widened section (pavement) of I-93 and the transit corridor in the median under the NH 102 bridge. This concept will impact the wetland areas adjacent to the sewerage treatment plant to the south of Exit 4 and Wheeler Pond to the north. Retaining walls will be necessary to reduce or eliminate these impacts. This concept will be carried forward for further evaluation in the DEIS.
- The westerly widening concept would hold the east edge of the existing NB barrel with all widening occurring to the west side of I-93. This concept would require the WB NH 102 to I-93 SB ramp and the I-93 SB off-ramp to be reconstructed. NH 102 roadway would be realigned to the south of existing NH 102 allowing the existing bridge and approaches to maintain traffic while a new wider and longer NH 102 bridge and approaches are constructed. This option would reduce or eliminate impacts to the wetland areas near the sewerage treatment plant and Wheeler Pond along the east side of I-93 and reduce the need for the construction of retaining walls. However, this concept would require extensive ledge removal to accommodate the reconstruction of the SB ramps. This option will be carried forward for further evaluation in the DEIS.

The existing park and ride/bus service could be expanded to the north and serve as a train station in the future when rail service is implemented.

### Exit 5

At Exit 5, three interchange concepts were developed. For all three concepts the diamond type ramp design for the SB on and off-ramps are identical. The NB diamond type ramp layouts for concept 1 and concept 2 are the same. Each of these three concepts will be carried forward for more detailed evaluation in the DEIS.

- For the concept 1 interchange configuration, NH 28 on the east side of Exit 5 is realigned to replace the existing reverse curves with a simple curve. NH 28 will be widened to 6-lanes through the interchange and transitioned down to a 5-lane section through the Liberty Drive intersection before transitioning back down to a two-lane section approximately 1000 feet south of Liberty Drive. This realignment reduces potential impacts to properties along the east side of NH 28 between Auburn Road and the relocated Liberty Road intersection with NH 28. This concept would substantially impact properties located on the west side of NH 28 along the inside of the relocated curve. To the west of the Exit 5 interchange, the 6-lanes in the interchange area will be transitioned to 5-lanes through Perkins Road and then transitioned to the existing NH 28 2-lane section. Perkins Road is realigned approximately 200' to the west to align with the entrance to the transfer station driveway on NH 28.
- For the concept 2 interchange layout, NH 28 east of I-93 would generally retain the existing alignment along NH 28. This concept utilizes the same ramp improvements identified under concept 1. This concept reduces impacts to the properties along the west side of NH 28 along the inside of the curve, however properties along the east side of NH 28 in the vicinity of

Liberty Road and Auburn Road intersections would be impacted by the split widening along NH 28.

- A third interchange concept for Exit 5 would again retain the SB ramp configurations and the NH 28 alignment as in concept 2, but the NB ramps would be relocated to the south of the existing ramps and intersect along NH 28 further to the east. This design would realign the NB ramps to one major intersection opposite the recently constructed Liberty Drive intersection. This concept would provide additional separation from the NH 28/SB ramps and direct access to an industrial area being developed off Liberty Road. This concept would impact some wetlands southeast of the interchange, but possibly reduce impacts to wetlands in the NE quadrant of the Exit 5 Interchange. This concept would extend property impacts along NH 28 frontage to the south.

### **SCHEDULE**

Jeff Brillhart presented the project schedule noting that the schedule has remained fairly constant over the past eight months.

- Complete Rationale Report – mid-January 2001
- Have detailed plans of widening schemes – March/April 2001
- Complete Draft EIS – November 2001
- Public Hearing – January 2002
- Final EIS – August 2002
- Begin Construction – March 2004

### **QUESTIONS AND COMMENTS**

Peter Griffin: I agree that I-93 needs to be widened but I would like to focus on the rail options. The Department has said that this is the last widening for I-93. What happens after the highway is widened and the traffic is congested again? I have two questions? 1/. If the rail corridor continues down the I-93, what will the ridership impacts be on the existing Massachusetts stations in Lawrence and Ballardville? The infrastructure to accommodate an I-93 rail corridor option will need to be either a tunnel in the median or a rail line that runs in the corridor along the left or right hand side of I-93. The cost and property impacts of either could be prohibitive. 2/. If Massachusetts does not want a I-93 corridor rail option then NH's idea of a I-93 median rail option could be defunct before it starts, which suggests that the East rail option would be the only option available. Unfortunately, if the NH communities along the corridor feel that NHDOT is suggesting that the median rail option is the best option, then the communities may not retain the East Rail corridor for future use as a rail corridor, and then there may be no available rail option in the area served by the I-93 corridor. Is that reasonable to say?

Jeff Brillhart: It is premature to reach any conclusions at this time. We are setting up meetings to discuss alternatives and options with all of the various stakeholders in Massachusetts. Conceivably the I-93 rail corridor

could cross over I-93 south of Exit 1 and connect to the East Rail line just north of the Lawrence station. We need to consider the highway and introduce Expanded and Enhanced bus service into the corridor. As the highway becomes congested and the bus service is unable to meet the demand, rail will need to be instituted to meet our mobility needs. It would appear that rail will need to play a role in the not too distant future.

Peter Griffin: For the relatively new Old Colony project in Massachusetts, the rail ridership is already at 9000 passengers per day. So rail is viable. When should the process for instituting rail begin?

Jeff Brillhart: Soon. To a degree it has already begun with the I-93 project, but additional work independent of I-93 needs to be done. Rail funding, coordination with Massachusetts and legislative support will be required.

Roger Hohenberger: 1/. What are the main considerations when choosing one of these interchange concepts at Exit 3? 2/. What would the intersection look like where the old NH 111 meets the relocated NH 111 in the area of Castleton?

Jeff Brillhart: 1/. Environmental and property impacts are significant issues to consider when selecting options. The need to provide the right type of design that meets the future traffic volumes is also important. We need to develop these options in more detail to determine these impacts and evaluate how the interchange will operate. 2/. The easterly section of NH 111 will be dead-ended just beyond the Castleton drive and a frontage road created, the westerly end would be reconnected to NH 111. That reconnection location depends upon which option is selected.

Al Turner: Cobbetts Pond is impacted by the runoff that is coming off NH 111 and I-93. Because the water is concentrated into a brook there, is it possible to use state of the art water treatment systems to reduce the impact? Is it too early to discuss this now?

Jeff Brillhart: It is too early now to say what water treatment measures will be utilized, but it is not too early to discuss conceptually the need to provide water quality treatment areas throughout the entire project. The Department has used and would consider chamber systems or what are called structural Best Management Practices. Typically they don't really do the best job for treatment of runoff. These types of structures are generally used when there is no room for any other type of treatment available.

Bruce Tasker: The state of the art type of treatment used today is wet basins or terraced sedimentation and treatment basins. The vortex chambers are only used where these basins and swales cannot be built.

Comment: Will this help reduce the salt runoff into the pond?

Jeff Brillhart: Salt when mixed with water becomes soluble in the water and thus salt cannot really be eliminated. Dissipating the runoff over a larger area as opposed to a more concentrated area helps. What also helps is

- better salting practices through the use of better equipment and knowing when to salt and not to salt in accordance with pavement temperatures and conditions.
- Comment: Why is the Exit 3 interchange so large when compared to the other interchanges which appear to be more compact?
- Jeff Brillhart: Terrain and topography are the primary factors governing the geometric layout of Exit 3.
- Bruce Tasker: There is definitely a terrain problem as the grades of I-93 through the area are among the steepest along I-93. The combination of the existing NH 111 grades and the terrain forced the shape of the existing interchange to follow the easiest path when considering the overall construction costs and constraints at that time. The actual existing interchange configuration is not so different as other interchanges in the corridor except that the median width is greater which spreads out overall the interchange layout. The new interchange concepts actually shift the NB and SB barrels closer together to provide for a tighter interchange and at the same time improve the distance between the NB ramp intersections and NH 111A.
- Comment: Will the I-93 SB mainline widening or the ramp construction affect the rookery located to the west of I-93 near the weigh stations?
- Jeff Brillhart: Based on the concept that we have developed to date, the work will not affect the rookery.
- Comment: Are there any historic impacts? Will the Department be working with SHPO?
- Jeff Brillhart: The Department will coordinate with SHPO to understand what impacts there are and how they can be avoided. We need to take care not to impact Searles Castle. There may be historic resources along NH 111A in the vicinity of I-93, which need to be looked at. There are also archaeological resources in the form of old cellar holes in the median area, which will need to be evaluated.
- Wayne Morris: 1/. With regards to bus service, has consideration been given to provide some type of bus service down NH 128? This corridor parallels I-93 and it's a straight shot down into Massachusetts to Gallagar Transportation Center. 2/. Regarding the current I-93 NB ramps at Exit 3, can the Department reconfigure the NB section to a diamond ramp by using the existing I-93 NB mainline as part of a new diamond off and on-ramp design?
- Jeff Brillhart: Bus service down NH 128 has not been looked at, but we will take a look at that corridor. The Department has been working with Concord Trailways, who serve I-93, but perhaps another bus route could be available.
- Tony Grande: Relative to the NB ramp layout, your suggestion, is exactly what we are proposing for the NB off-ramp. For the NB on-ramp, we have shown a new diamond ramp located just west of the existing mainline barrel. If this concept were built, the remaining portions of the NB mainline would be removed and re-graded.

- Comment: Are you aware that the relocated section of NH 111 to the west impacts Windham's newly created Business and Technology Park?
- Jeff Brillhart: We are aware of that impact. The reason for the shift to the north is to reduce the impacts to the existing properties along the south side of NH 111. We believe that this type of layout, which creates a frontage road, will best serve the properties along NH 111 and the traffic traveling on NH111.
- Comment: 1/. What is going to happen to the properties along Canobie Lake just south of NH 111A near the Town line? Will sound barriers be installed similar in style to those being constructed for the section of I-93 near Bodwell Road?
- Jeff Brillhart: The intent is to widen I-93 to the median or west side of I-93 in that area to minimize impacts to those properties. The soundwall locations have not been determined, but if they are constructed they will be similar in design to the soundwalls at Bodwell Road .
- Russ Wilder: Has the Department looked at any pavement options for I-93? Some pavements are much quieter than others.
- Jeff Brillhart: Typically we address on the geotechnical and pavement design needs for the corridor later in the process. Whether open grade pavements would be used has not been determined.
- Doug Barker: I have been serving with the State's Incident Management group. For the NH 111 construction and the I-93 construction, I would like the Department to meet with the Town safety officials to talk about traffic control and construction phasing and how safety response issues relative to incident management will be addressed during construction.
- Jeff Brillhart: It is somewhat early in the process to discuss these issues in real detail, but this is something that needs to be addressed for this project.
- Al Turner: Can we transition the four lanes for NH 111 WB down to two lanes as soon as possible, so we don't have 4-lanes coming into the downtown section of Windham?
- Jeff Brillhart: This will be looked at in detail. We will try and transition the work as quickly and safely as possible.
- Wayne Morris: Is it possible to connect Governor Dinsmore Road over the interstate to the west side to help alleviate traffic congestion on NH 111 through the interchange area? I believe there was a road there before the interstate was constructed?
- Jeff Brillhart: There is large difference in grade between Governor Dinsmore Road and the other side of the I-93. Such a bridge would be quite long and extremely high in the air and probably not practical.
- Comment: I am concerned about the impacts that this project will have relative to taking valuable commercial property, which in turn will impact our tax base. The land in the median will be impacted by the shift of the highway. Relocating NH 111 to the north (west of Exit 3) will also impact valuable property.

Jeff Brillhart:

I understand your concern. The land in the median is currently being purchased by the Department to develop a park and ride facility and to provide for the geometric and drainage needs of the highway. Large scale development in that area would be detrimental to the transportation system and to the development.

With respect to upgrading NH 111 on existing alignment west of Exit 3, the Department is amenable to studying this concept further if the Town feels strongly that such a layout has merit. From the Department's perspective such a layout would not be acceptable because of the large number of impacts to properties; the impacts to access; and the continued proximity of NH 111 to the Cobbetts Pond residential area. In terms of access, upgrading NH 111 on existing alignment will likely require a raised median island which will limit access to a number of properties to right-turn in and right-turn out only. In addition, Castleton access would have to be completely relocated to the west as the drive is too close to the SB on-ramp.